Attachment A

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the matter of	)	
	)	
Implementation of the Local Competition	)	
Provisions in the Telecommunications Act	)	CC Docket No. 96-98
of 1996	)	

Joint Reply Affidavit of
Debra J. Aron,
William L. Fitzsimmons,
and Robert G. Harris
on Behalf of Ameritech
June 10, 1999

I. Introduction

Our names are Dr. Debra J. Aron, Dr. William L. Fitzsimmons, and Dr. Robert G. Harris. We are the same Drs. Aron, Fitzsimmons, and Harris who previously filed affidavits with the Commission in this proceeding.

In our initial affidavits, we proposed tests that satisfy the "necessary and impair" standards established in Section 251(d)(2) of the Telecommunications Act of 1996 ("the Act") for determining which elements must be unbundled. Our tests correct the deficiencies identified by the Supreme Court in the Commission's original "Rule 319," are grounded in sound economic theory and factual analysis, and ensure that unbundled network elements ("UNEs") will be made available when they truly need to be without resulting in unnecessary and costly requirements for incumbent local exchange carriers ("ILECs") to unbundle their networks. We also provided extensive factual analysis demonstrating that unbundled local switching, in particular, fails the necessary and impair standards in many geographic areas in the Ameritech region. Our main conclusion in our initial affidavit was that a national *process*, grounded in economic principles of consumer welfare, is critical to the implementation of the 'necessary and impair' conditions of the Act, but that a national *list* of UNEs would be inappropriate, and would in fact violate the economic content of the 'necessary and impair' conditions.

In this reply affidavit, we address the comments offered by a number of other parties in the proceeding and show that their proposals are inconsistent with the purposes

of the Act and sound economic principles, would not satisfy the requirements of the Court's remand, and would result in poor public policy. Moreover, we show specifically that the requests of intervenors for an unbundled switching element to be included on a national list of elements violate the principles of consumer welfare that undergird the necessary and impair conditions and, moreover, are directly contradicted by the factual evidence in a great many market areas.

Our reply affidavit begins with an explanation of why the opposing parties' overly-broad approach to unbundling does not serve the public interest and is inconsistent with the goals of the Act. We then provide a detailed factual rebuttal to AT&T and the other aligned parties, who claim that switching and the UNE platform ("UNE-P") satisfy the necessary and impair standards. We demonstrate that switching is currently being self-provided on a broad basis by many CLECs throughout the country. In the face of such extensive factual evidence, only the most vacuous interpretation of the necessary and impair standards could support requiring unbundled switching on a national basis. The assertions made by the opposing parties regarding the "infeasibility" of facilities-based entry are not only unfounded and misleading, as we will show, but they ignore the realities of CLEC network architecture and the extent of actual self-provision in the market today. Finally, we show that the opposing parties' claims that the UNE-P is necessary in order to provide mass-market residential service is a self-serving decoy whose credibility is undermined by the economics of the UNE-P and the statements of the parties themselves.

II. Maximizing Competition Is The Goal Of The Act, Not Maximizing The Number Of Competitors

As we explained in our initial (Aron-Harris) affidavit, the Act seeks to replace regulation with competition and use market forces rather than administrative rules to transmit the benefits of the telecommunications revolution to consumers. The benefits of new, innovative services and low prices depend critically on whether the competition that emerges is the result of winning in the marketplace or simply the result of ill-advised policies. Policies that err on the side of too much unbundling will discourage innovation by ILECs and risk-taking and real investment by CLECs and will permit the development of a class of erstwhile-competitors with a long-term dependence on the subsidies that flow from the incumbent's network.

The fundamental premise of AT&T and the other aligned parties, that the purpose of the Act is to maximize the number of competitors,[1] is self-serving and contrary to fundamental economic tenets. Maximizing the number of competitors, as opposed to promoting efficient competition, is neither in the public interest, nor supported by any commonly accepted principles of economic theory. Any interpretation of the term "impair" that uses a number-of-competitors style of test is absolutely outside of the accepted body of economic consumer-welfare theory.

If the Commission acquiesces to the mindset that it should establish rules to maximize the number of competitors, regardless of how inefficient those competitors may be and regardless of the negative implications for effective, facilities-based

[1] Affidavit of Glenn Hubbard, William Lehr, and Robert Willig on Behalf of AT&T, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, May 1999, p. 6.

competition, the Commission will have failed to serve the public interest. As discussed more fully below, erring on the side of excessive unbundling, as some parties advocate,[2] does not minimize social risk, but actually undermines the very goals of the Act. If the Commission accepts these commentors' position, it will grossly misinterpret the Congressional intent and do American consumers a gross disservice. Unbundling all elements without considering whether they are truly necessary, or whether denial of them would in fact impair competition, stunts innovation and thwarts beneficial competition.

The "definition" of the impair standard proposed by MCI and AT&T (they offer none for the "necessary" standard) is nothing more than an implementation of this self-serving premise. If one rejects the premise, which violates sound economics, the Supreme Court's mandate, and sound public policy, one must reject their impair standard and all conclusions that follow from it. If the Commission's objective is, improperly, to maximize the number of competitors, with total disregard for encouraging *effective* competition and incentives for innovation, it could hardly have done a better job the first time around.

The Court properly rejected the Commission's shotgun approach. The Act's objective of enhancing consumer well-being is not served by ignoring the efficiency of entrants, or by ignoring the social costs of unbundling. However, if one recognizes that only efficient entry enhances welfare, then one must recognize that inefficient entry is *not*

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[2] Hubbard, Lehr, and Willig argue at p. 18 that "there is little countervailing risk that a policy requiring incumbent LECs to unbundle UNEs and offer them at cost-based prices will produce harmful effects." John E. Kwoka states that "given the huge resulting benefits, where issues are close, erring on the side of encouraging entry would seem to be good policy." Declaration of John E. Kwoka, on Behalf of MCI WorldCom, Inc., In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, CC Dockets Nos. 96-98 and 95-185, May 1999, p. 11.

welfare-enhancing and should not be encouraged. This requires a nontrivial screening rule on unbundling; it requires a screening rule with teeth. Recognizing that unbundling has significant social costs implies that unbundling must be *limited* to those instances where it truly enhances efficient competition – and enhances it *enough* to overcome the social costs of unbundling. This is the inescapable implication of both economic logic and the Supreme Court's lucid ruling, and is consistent with the antitrust approach to "essential facilities." Indeed, AT&T's economists acknowledge that their proposed approach is inconsistent with accepted antitrust standards.[3,4]

Maximizing competition, rather than myopically focusing on the number of competitors, is a well-established economic and legal principle in our economy. In prior proceedings, even AT&T has embraced the position that it is competition, not individual competitors, that should be the focus of regulation. When discussing competition in the interexchange market, they state "the very purpose of regulation is to maximize consumer -- not competitors' -- welfare by assuring that customers get the broadest array of services at the lowest possible prices."[5] Similarly, AT&T argued in its successful petition to gain non-dominant status that "the [parties opposing AT&T's petition] confuse competition with the improper protection of competitors.... The system of handicapping proposed by

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3 Affidavit of Glenn Hubbard, William Lehr, and Robert Willig on Behalf of AT&T, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, May 1999, p. 6.

4 Even other IXCs disagree with AT&T's contention that antitrust doctrine is inapplicable to the unbundling issue. MCI WorldCom's economist, Dr. Kwoka, argues that the Merger Guidelines contain relevant guidance for this proceeding. In particular, he states that timely entry is considered to be that occurring within two years – precisely the time frame we propose.

5 AT&T's Reply Comments in the Matter of Competition in the Interstate Interexchange Marketplace, CC Docket No. 90-132, p. viii.

the competitors is the very opposite of competition, and can only harm consumers." [6] AT&T's criticism applies equally to its own advocacy in this proceeding.

III. An Ambiguous Or Non-Substantial Impair Test Does Not Serve The Public Interest Or Implement The Objectives Of The Act

Whether the Commission adopts rules that ultimately benefit competition (and hence consumers), or whether the Commission adopts rules that instead benefit some competitors at the expense of effective competition, depends on the conceptual definitions of necessary and impair that it adopts. The necessary and impair tests we proposed in our initial affidavit are derived from principles of consumer-welfare economics and are given empirically testable ("bright-line") form using conservative rules consistent with antitrust tenets where such consumer-welfare tests are critical. Accordingly, the tests we proposed in our initial affidavit would lead to unbundling when unbundling is vital to competition, but would not result in knee-jerk unbundling, as would the proposals of opposing parties.

Indeed, parties that propose broad, ambiguous interpretations of the necessary and impair standards offer no limiting standard at all.[7] Some parties, particularly the interexchange carriers (IXCs), want the entire network unbundled and apparently believe that proposing a nebulous standard will foster that outcome. We sincerely hope that this

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[6] Reply Comments of American Telephone and Telegraph Company, In the Matter of Competition in the Interexchange Marketplace, CC Docket No. 90-132, p. 5.

[7] Comments of Association for Local Telecommunications Services (ALTS), AT&T, Competitive Telecommunications Association (Comptel), Competition Policy Institute, COVAD, McLeodUSA, Sprint, et al., In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, May 1999.

subjective and self-serving interpretation of the necessary and impair standards will not be adopted by the Commission.

In precisely that vein, AT&T's and MCI's "definitions" of impair are so sweeping as to be meaningless. AT&T states that "a CLEC's ability to provide service is ... 'impaired' by being denied access to the incumbent LEC's network element if it is unable to provide service as broadly, as effectively, or as promptly as it would if access were granted,"[8] and that "impairment could manifest itself as a CLEC's failure to enter geographic, customer, or product markets as broadly as it would have done absent the impairment."[9] Hence, by AT&T's standard, if a CLEC could enter one day sooner, or could serve one more customer, with a particular network element than without, then the denial of that UNE would constitute an impairment. This argument is akin to a janitor asking a "ladder regulator" for access to the incumbent's half-inch-taller ladder because the janitor would get tired faster by stretching his arm to its full length, and would not be able to change as many light bulbs as fast as he would like. AT&T's definition is a slap in the face to the Court, which clearly required that FCC lend substance to the Act, and that it impose "limiting" necessary and impair standards.

Similarly, MCI economist John Kwoka proposes a five-part set of criteria for "material impairment." Each criterion is based on the premise that any entrant who, essentially, cannot do anything and everything that the ILEC does, immediately and

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8 Comments of AT&T Corp. on Second Further Notice of Proposed Rulemaking, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, May 1999, p. 29.

9 Affidavit of Glenn Hubbard, William Lehr, and Robert Willig on Behalf of AT&T, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, May 1999, p. 7.

profitably, should be provided UNEs, even if the CLEC's disadvantage is due to its own inefficiency. While Dr. Kwoka pays brief lip service to the notion that the decrease must be "significant," he provides no guidelines for operationalizing "significance." There is no accommodation made in his analysis, or in that of AT&T, for the possibility that an entrant might be unsuccessful because it offers an inferior service, or due to its own incompetence. Nor is there any accommodation made for the possibility that the CLEC is making or could make a profit without UNEs. Such a carrier might be able to make more profits if it had UNEs but, as the Supreme Court pointed out, that alone is not sufficient reason for unbundling. An impairment standard that does not attempt to limit unbundling to the cases where it would make competition possible that otherwise would not be, is not in the public interest and is not consistent with the Supreme Court's ruling.

Moreover, although the assertion is critical to their position, AT&T's economists are blatantly wrong in claiming that there is "little countervailing risk" in too much unbundling. There are many significant social and private costs to erring on the side of excessive unbundling, both of a direct and an indirect nature as described in our initial (Aron-Harris) affidavit. AT&T's argument ignores the very foundation of an economy rooted in property rights, where ownership provides incentives for caring for one's property and investing in innovation. The affidavit filed by Jorde, Sidak, and Teece in the initial round of comments in this proceeding further details the potential adverse effects of unbundling on innovation.[10] They note that "mandatory unbundling decreases

[10] Affidavit of Thomas M. Jorde, J. Gregory Sidak, and David J. Teece, on Behalf of the USTA, Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98, Interconnection between Local Exchange Carriers and Commercial Mobile Radio Services Providers, May 1999.

an ILEC's incentive to invest in upgrading its existing facilities by reducing the *ex ante* payoffs of such investment. Requiring a firm to grant to its competitors unbundled access to its facilities at TELRIC-based rates greatly reduces, if it does not eliminate entirely, the probability of excess return; such mandatory unbundling thus eliminates the ILEC's incentive to invest in existing facilities."[11]

Tellingly, neither the AT&T economists nor the MCI economist make any attempt to reconcile their approaches with the admonition of the Supreme Court against overly broad, non-limiting standards. Indeed, the AT&T economists appear to profess not to have even read the Court's ruling,[12] and both parties entirely ignore Justice Breyer's important articulation of the principle that unbundling is costly and that its costs must be taken into account. Because erring on the side of excessive unbundling is emphatically *not* harmless, the Commission should seek to *minimize* its error in deciding which elements to unbundle by conducting a well-reasoned factual analysis, not by "deciding" on which side it wants to err. Our approach provides the steps for conducting a well-reasoned factual analysis that will minimize the welfare impact of any error. Accordingly, our approach can serve as a blueprint for a national process in the determination of UNEs. In contrast, AT&T and MCI offer no such process for

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11 Affidavit of Thomas M. Jorde, J. Gregory Sidak, and David J. Teece, on Behalf of the USTA, Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98, Interconnection between Local Exchange Carriers and Commercial Mobile Radio Services Providers, May 1999, p. 15.

12 Affidavit of Glenn Hubbard, William Lehr, and Robert Willig on Behalf of AT&T, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, May 1999, p. 11.

minimizing error; indeed, by embracing the concept of a wide-ranging national list of UNEs, their proposals would ensure the perpetration of gross errors.

Ultimately, the IXCs' impair definitions can make sense only if one accepts their common premise that the purpose of the Act is to maximize the number of entrants, without regard to the impact on genuine competition, investment, or innovation. To accept this premise is to violate the purpose and intent of the Act. Inasmuch as the IXCs' premise is baseless, their sweeping definitions of impair must be rejected as bad public policy.

IV. Ignoring Relevant Markets And Real-World Facts Would Result In Uneconomic Unbundling Decisions

A. The Proposals Seeking Blanket Unbundling Are Unsupported By Facts

Significantly, the standards proposed by those who seek ubiquitous unbundling carry virtually no factual support. We believe that the fundamental reason for this is quite clear. A fact-based analysis leads to an unacceptable result to these parties – namely, that unbundling is not ubiquitously required, as they assert. Our initial affidavits exhaustively discuss the nature of the fact-based economic and public policy analysis that must be conducted in order to determine where and when unbundling should and should not occur. There simply is no shortcut to the right result. A seat-of-the-pants method uninformed by factual analysis is ill-suited and inappropriate for the important public policy decisions necessary to satisfy the intent of the Act.

Our initial affidavits establish how a proper economic and public policy analysis should be conducted by first determining the relevant geographic and product markets,

and then assessing the extent to which unbundling is necessary or failure to unbundle would impair competition in those markets. As we discussed at length, the essential facilities doctrine need not be wholly embraced by the Commission in establishing its tests for "necessary and impair." However, the basic framework for economic and public policy analysis contained in the doctrine is one that has long been used to assess competitive impacts, because it seeks to balance the benefits of facilities-sharing for the promotion of competition, with the well-known damage to incentives that sharing creates. That framework, which our proposals incorporate, simply cannot be ignored for the unbundling decisions at issue here. While pursuing a course that does not require a factual analysis may be convenient and expeditious for opposing parties to get the results they seek, it violates both the letter and the intent of the Act.

B. National List Of Unbundled Elements Is Not Possible

We support the adoption of a national *rule* for determining what must be unbundled, and where. However, when such a rule is properly applied, it is clear that the factual evidence will not support a national *list* of elements to unbundle. The facts clearly demonstrate that the availability of alternatives varies significantly by geographic area and by element. Glossing over this empirical evidence to make life easy for CLECs or regulators will not satisfy the requirements of the Act or the Court's remand. However, the advocacy of a national list cannot withstand an examination of the facts, and therefore it is not surprising that the opposing parties offer no facts in support of their proposals.

Indeed, AT&T's economists, who support blanket unbundling, base their conclusions only on what they claim to have been told about the market and provide no supporting facts.[13] In contrast, our initial affidavits described a clearly defined, nationally applicable method for empirically analyzing the telecommunications market to determine whether lack of access to elements would impair competition. Whether the Commission elects to sort out the facts itself or delegates that responsibility to more geographically proximate jurisdictions, the decisions to unbundle must be based on a careful factual analysis. Otherwise, the Commission will end up in the same position it is today, where it has not adequately applied the necessary and impair tests required by the Act.

While the need for analysis on a geographically specific basis makes it impossible to establish a list of network elements that must be unbundled nationwide, it is possible for the Commission to establish national rules. The distinction between a national list, discussed above, and national rules is an important one that was not addressed by parties urging excessive unbundling. National rules that establish a framework for analysis were described in our initial (Aron-Harris) affidavit. We will not repeat that discussion here but wish to make clear that refraining from issuing a national list of elements that must be unbundled does not prevent the Commission from assuring consistency in the way that decisions are made. In fact, we urge the Commission to adopt a framework that makes the unbundling decisions as efficient and consistent as possible, while assuring that the economic and public policy perspectives are fully considered. We believe that the framework that we proposed in our initial affidavits meets that requirement.

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[13] Affidavit of Glenn Hubbard, William Lehr, and Robert Willig on Behalf of AT&T, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC

V. False Claims Regarding Scale Economies And Cost Requirements Would Lead To Excessive Unbundling

A. Firms Do Not Need To Be At Minimum Cost To Enter Or Succeed In A Market

In their affidavit, AT&T's economists erroneously and misleadingly assert that "where the incumbent LEC fails to unbundle a network element, and, as a result, CLECs experience higher costs through lower scale and scope economies, assemblage costs, or higher alternative network element rates, CLECs will be unable to offer fully competitive service, and unable to provide fully effective competitive discipline on the incumbent LECs."[14] The fundamental idea is that a firm cannot enter or compete effectively in a market unless it has costs that are equal to or lower than those of the incumbent in that market. This is not true in theory or in fact. If this were true, one would expect to see almost no entry into any industry in our economy to the extent that a firm had to enter with the complete achievement of all economies of scale, having fully exhausted the learning curve, and with maximally efficient production assets and processes. This simply does not occur in any free enterprise economy. Firms typically enter at smaller scales, as Dr. Kwoka, MCI's economist, points out,[15] learn by doing, and hope to grow their businesses so that they can successfully compete over the long haul. Unbundling solely to allow entrants to benefit from any economies of scale or other cost advantages

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Docket No. 96-98, May 1999, p. 11.

14 Affidavit of Glenn Hubbard, William Lehr, and Robert Willig on Behalf of AT&T, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, May 1999, p. 12.

15 Declaration of John E. Kwoka, on Behalf of MCI WorldCom, Inc., In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, CC Dockets Nos. 96-98 and 95-185, May 1999, p. 9, n. 3.

of the existing firms assumes that telecommunications markets are fundamentally different from all other industries and that entry into this marketplace requires cost advantages for entrants that evidently no other industries require. AT&T's economists provide no evidence that the telecommunications industry specifically and uniquely requires entrants to achieve the same cost structure as the incumbent, and so their extraordinary argument should be disregarded.

The opposing parties' assertion is also not supported by economic theory. While economic theory tells us that lower-cost firms have higher survivability than higher-cost firms, theory does not predict the failure of all higher-cost firms, nor does it predict a failure of effective competition. On the contrary, such an assertion ignores much of the professional literature in industrial organization published in the last 20 years. Only in the most rigid economic models of competition, in which there is an unlimited supply of maximally efficient firms producing identical products, is this outcome predicted. More realistic models of competition result in the coexistence of firms of somewhat varying efficiency, and though the more efficient do drive out the less efficient, some less-than-ideally efficient firms survive. Firms whose efficiency lies below a threshold will not survive and/or will not enter; those with greater efficiency will survive. They need not be ideally efficient, and they need not be more efficient than the incumbent.

Not only is it unnecessary for firms to achieve the incumbent's cost level before entering a market, but it is not even necessary that they achieve those goals over the longer run. Indeed, we challenge the opposing parties to identify industries in which all firm have the same costs and all are at the efficient scale. The notion that in a

competitive environment all competitors must face the same costs in order to survive or for competition to be effective is simply not something that is observed in the actual marketplace. For example, when the *Handbook of Airline Economics* examined the unit cost rate for narrowbody aircraft at 500 miles for each of the thirteen national airlines, the operating cost per actual seat capacity (ASM) ranged from ValuJet's 6.26 cents to United's 11.69 cents.[16] Apparently United's large scale has not conferred upon it a cost advantage over smaller rivals. More important, we point out that despite being the highest cost producer, United is persisting quite well in the industry and surely is not close to being forced to exit the market. The Commission itself has recognized that competition does not require equality of costs. The order approving the MCI WorldCom merger found that "the Commission rejected similar arguments in the *AT&T Domestic Non-Dominance Order* where it found that 'it is not surprising that an incumbent would enjoy certain advantages, including resource advantages, scale economies, long-term relationships with suppliers (including collocation agreements), and ready access to capital,' but that the 'competitive process itself is largely about trying to develop one's own advantages, and all firms need not be equal in all respects for this process to work.'"[17]

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16 Jenkins, Darryl, et al., "Low Costs – The Key To Airline Success As Pricing Becomes Increasingly Market Driven," *Handbook of Airline Economics*, Aviation Week Group: McGraw Hill, 1995, p. 291.

17 See *Memorandum Opinion & Order*, In the Matter of Application of WorldCom, Inc. and MCI Communications Corporation for Transfer of Control of MCI Communications Corporation to WorldCom, Inc., CC Docket No. 97-211, Adopted: September 14, 1998, citing *AT&T Domestic Non-Dominance Order*, 11 FCC Rcd at 3309, para. 73, itself quoting Competition in the Interstate Interexchange Marketplace, CC Docket No. 90-132, *Report & Order*, 6 FCC Rcd 5880, 5892 (1991) (*First Interexchange Competition Order*).

B. CLECs' Claims Of Cost Disadvantages Are Misleading And Ignore Their Inherent Cost Advantages

CLECs have commented at length in this proceeding on the multitude of possible cost disadvantages that they face, ranging from the additional costs of backhaul to the nebulous notion of assemblage costs.[18] This notion of putative cost disadvantages needs to be balanced by analysis of all the advantages that CLECs enjoy over ILECs.

In fact, rather than CLECs having a cost disadvantage relative to incumbents, it might well be the case that the new entrants enjoy significant cost *advantages* over the ILECs. As the analysis in Section VII(A) shows, the incumbents are encumbered with an existing network designed and built for older, lower-capacity switches, with a long history of office and switch locations, etc. CLECs, on the other hand, have been able to enter the market with the most modern configuration available. They can locate their switches wherever they choose, serve the customers they choose to serve and adopt only the latest in technologies. CLECs can serve far more customers with a single switch than ILECs do. Presumably, ILECs would install far fewer switches if they were designing their networks today given today's technology, but they are stuck with their outdated, switch-heavy architecture.

Added to these CLEC technological advantages are the substantial asymmetric regulatory requirements that prevent ILECs from picking and choosing which markets and customers to serve, slows their market responsiveness and prevents them from

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18 Affidavit of Glenn Hubbard, William Lehr, and Robert Willig on Behalf of AT&T, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, May 1999, p. 10. Hubbard-Lehr-Willig scrupulously avoid any empirical discussion of the magnitude of the assemblage costs they cite. They fail to introduce any evidence in the record that these assemblage costs are non-trivial.

charging above-cost prices in some markets. It is far from clear whether ILECs or CLECs possess net cost advantages, once all of these factors have been considered. At a minimum, however, there is no factual evidence on the record showing that entrants face substantial cost disadvantages and must have unbundled elements in order to compete.

To summarize, each CLEC enjoys at least some of the following advantages:

- Ability to exploit economies of scope between local exchange, long distance, voice, data, and video traffic;
- Ability to deploy and optimize their networks using the latest technology instead of updating legacy networks, optimizing their switch sizes and locations;[19]
- Ability to negotiate better terms from switch and transport equipment vendors due to higher levels of capital expenditure;
- Unique ability to offer an attractive bundled product offering "any-distance" (local /long-distance/international) across both voice and data;[20]
- No obligation to serve, and no requirement to offer residential services below cost;
- Substantial freedom from regulatory constraints;
- Ability to leverage ILEC-provided services instead of committing sunk investment;
- CLECs/IXCs can leverage existing business relationships in the national market, as well as knowledge of individual customer voice toll and data traffic flows; and
- Availability of economies in sales, marketing, and general administration, by exploiting national (and often international) scale of operation and scope economies across local and toll, voice and data.

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19 "The emergence of new CLECs and the expansion of the existing ones were enhanced by easy access to capital markets through most of 1998, allowing aggressive upstart carriers to raise billions of dollars to build out their networks using the very latest networking technologies. To say that venture spending on network start-ups reached new heights in the third quarter 1998 is like saying Mark McGwire set a new home run record this year in major league baseball." See Nemey, Chris, "Record Venture Cash Flows into 'Net Start-Ups," Network World, November 23, 1998, p. 1.

20 "The convergence of voice, data and video is driving technology innovation as well as the demand for new produces and services. Current predictions indicate the volume of data traffic will exceed voice traffic within two years. The change from circuit-switched to packet-switched networks is fueling significant investments in the communications sectors." Steve Meisel, Communications Network Analyst, PriceWaterhouseCoopers as cited in Nemey, Chris, "Record Venture Cash Flows into 'Net Start-Ups," Network World, November 23, 1998, p. 1.

It is plain that CLECs are, in fact, building very different networks than the existing incumbent networks:

> "It's become the network cliché of the decade: New local service competitors are getting a 'green field' start and have the advantage of using the best technology available today. Unlike the incumbent carriers, they have no legacy networks or existing customer base to protect and extend.
>
> "That advantage opens up a world of choices for these new companies to make. Recent developments in optical networking, packet switching and access technologies seem to expand the range of possibilities on an almost weekly basis.
>
> "As a result, the network architectures deployed by competitive local exchange carriers (CLECs) are not likely to follow the more rigid hierarchy of the public telephone network, resulting in a broader range of approaches as each new carrier seeks its own market and manner of differentiation.
>
> "CLECs also are expected to be the first proponents of a new generation of 'convergence' products that use the latest technology to combine voice, data and video services onto a single network to maximize operating efficiency."[21]

A discussion of CLECs' cost advantages or disadvantages needs to assess their actual and planned entry, not a fictitious replication of an existing network. Therefore, contrary to the advocacy of MCI, the use of cost models that replicate the *incumbent's* network, such as the Hatfield model,[22] is singularly inappropriate for evaluating CLECs' costs and the extent of "impairment." As MCI WorldCom's expert himself concedes: "It

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21 Wilson, Carol, "CLECs Sort Their Network Options," *Inter@active Week*, March 8, 1999.

22 For example, see the Affidavit of Mark T. Bryant on behalf of MCI WorldCom, Inc., hereinafter *Bryant Affidavit*. Bryant uses the Hatfield Model purporting to show that CLECs would be at a cost disadvantage if they were to replicate the ILECs' network structure. His analysis is irrelevant because CLECs would never lay out a network using the design in the Hatfield Model, which lays out a sub-optimal network from a CLEC's point of view. CLECs are using much more cost-effective network designs, such as that embodied in the LECG model (described in the *Fitzsimmons Affidavit*).

is important to recognize that the fundamental assumption made in [my] analysis – that the CLEC will begin by completely overbuilding the ILEC's network – is unrealistic."[23] In contrast, the LECG model presented in the Fitzsimmons direct affidavit analyzes impairment by realistically estimating the cost of constructing a modern CLEC network.

C. Scale Economies Do Not Necessarily Impair Competitors

CLECs have argued that their ability to compete effectively is impaired by the incumbent's purported scale economies.[24] While the IXCs' claims regarding the infeasibility of facilities-based entry support their case for excessive unbundling, it represents a revisionist history of CLEC entry. The fact that CLECs have been able to deploy their facilities in optimal, modern configurations, serve the most profitable customers, and leave less profitable or unprofitable customers to be served by the incumbents, has given CLECs a solid foundation on which to build their growing businesses. This observed market pattern has manifested itself regardless of the presence or absence of economies of scale. This market result is not surprising since it has emerged in many other industries in our economy as well. In fact, this literally is a "textbook" strategy for market entry.[25] Clearly, the agility and efficiency enjoyed by small, newly designed corporate structures often are more than sufficient to overcome

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23 See *Bryant Affidavit* at ¶32, p.14.

24 Affidavit of Glenn Hubbard, William Lehr, and Robert Willig on Behalf of AT&T, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket No. 96-98, May 1999, p. 12, ¶ 26. See also *Bryant Affidavit*, pp. 1-2.

25 In an apparent contradiction, MCI WorldCom affiant Kwoka appears to support this point, rebutting the claim that ILECs' economies of scale constitute a barrier to entry, absent widespread unbundling. At page nine of his report, he cites to research showing that not only does most entry occur among smaller firms, but that these smaller entrants have a better chance of survival than their larger brethren!

any scale economies that might exist. As the following examples show, David is quite capable of defeating Goliath.

Consider first a case in the retail department store marketplace. It is well documented that the economies of scale of large retail marketing have almost wiped out (or caused to be acquired) locally owned department stores and left small retailers only as specialty stores. In this historical environment, Sears, Roebuck and Company became the leading retail department store across the nation. Sears thus was a formidable incumbent with, presumably, huge scale economies and national ubiquity. By 1945 Sears had sales exceeding $1 billion.[26] Notwithstanding Sears' imposing market presence, a competitor emerged with just one store in 1962, Wal-Mart, and entered incrementally, market by market, and ultimately not only succeeded, but overtook Sears in the general merchandise market to became the largest retailer in the world.[27] The following two graphs illustrate that initial size did not impede the new entrant's ascendance in the marketplace.

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[26] *See* Chronology, *supra* note 1; Sears Today at (http://www.sears.com/company/pubaff/1980.htm)

[27] Wal-Mart is the largest retailer in the Fortune 500 list, *supra* note 5.

Figure 1

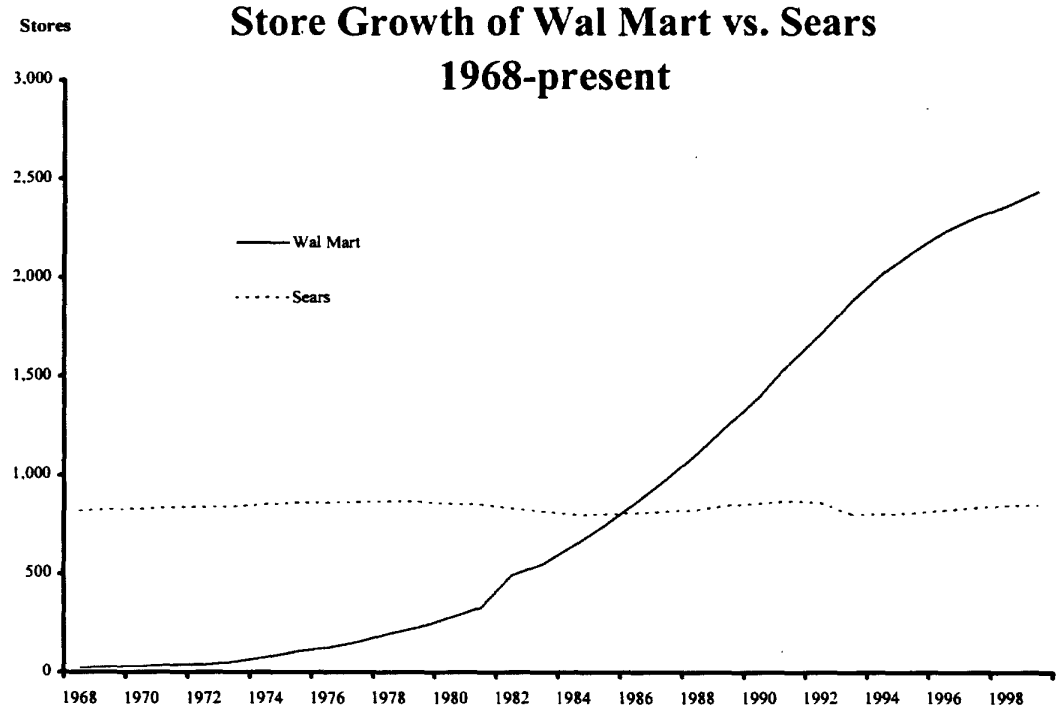
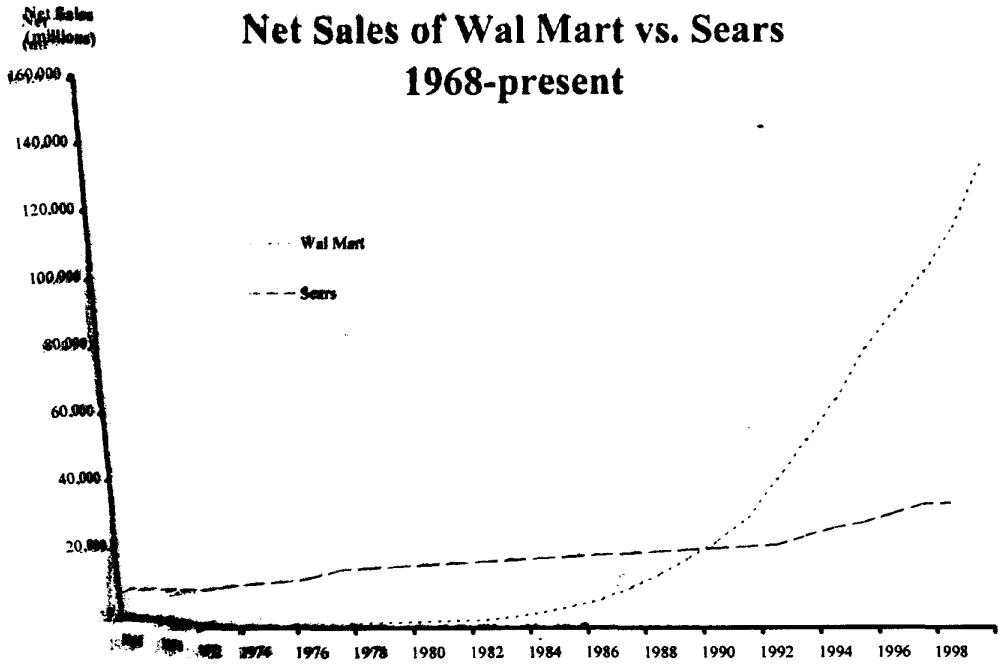

Stores
Store Growth of Wal Mart vs. Sears
1968-present
3,000
2,500
2,000
1,500
1,000
500
0
Wal Mart
Sears
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998

Figure 2



could not or did not enter all of Sears' markets at once and immediately become or equal Sears' scale economies, did not prevent Wal-Mart from challenging and, for all intents and purposes, beating Sears. Obviously, Sears was not forced to share its distribution system, locations, or confer any other benefits to its competitors for competitive outcome to occur. Economies of scale, *per se*, are not necessary for entrants either to enter or to expand.

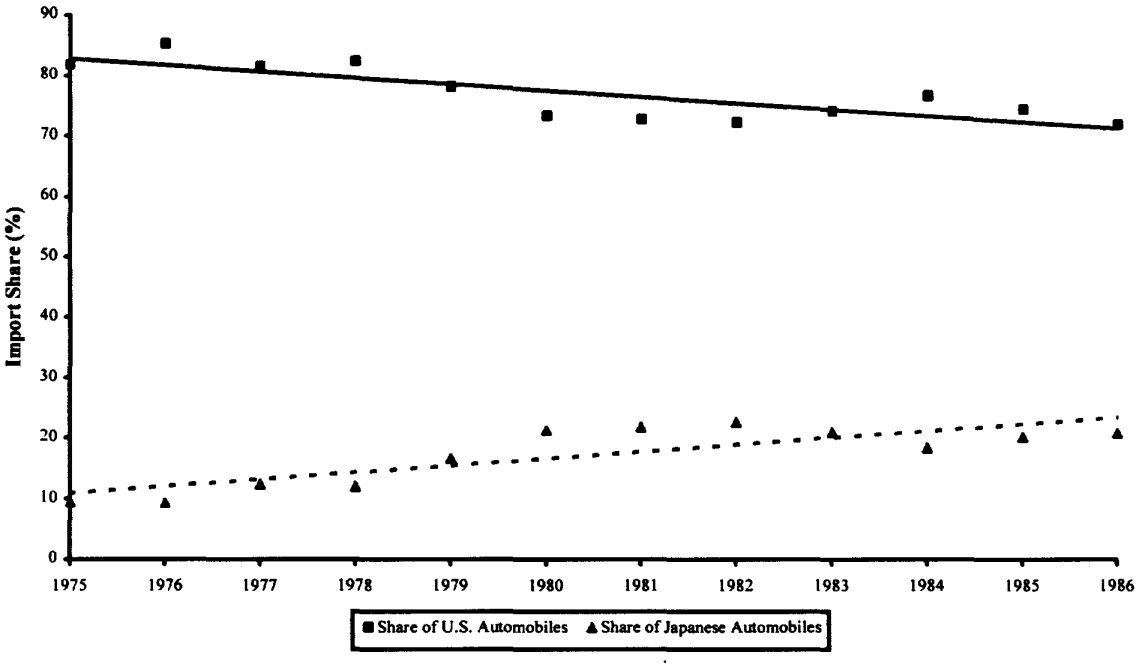
Another case demonstrating this same phenomenon is the entry of Japanese auto manufacturers into the U.S. automobile marketplace. Japanese manufacturers clearly lacked the economies and extensive distribution networks of the huge American manufacturers. However, as CLECs are doing today, the Japanese manufacturers entered the marketplace by focusing on a particular segment, and launched

their assault on the overall market from that initial market position. This incremental entry eroded the power of the large, entrenched incumbent providers.

In the 1970s, aided by volatility in gasoline prices resulting in increased demand for smaller, fuel-efficient cars, Japanese imports became more popular than ever, as shown by the trend lines in Figure 3.

Figure 3

Share of Domestic v. Japanese Automobiles in the U.S.
(1975-1986)



Source: Crandall, Robert W., "The Effects of U.S. Trade Protection for Autos and Steel," Brookings Papers on Economic Activity, Washington, DC: Brookings Institution, 1987, p. 276.

Despite Ford's and GM's attempts to compete in the small car market, the market share of Japanese imports continued to rise. Japan was providing formidable competition, producing affordable, quality automobiles that were and continue to be

virtually unsurpassed in terms of reliability, thus forcing U.S. auto manufacturers to increase the quality and reliability of their cars or else continue to experience an erosion of their market share.

Once again, it is clear that entry on an incremental basis is not only possible but has occurred repeatedly. It is a true testament to what can happen when market forces are allowed to work, with consumers being the ultimate beneficiaries of competition. Although economic circumstances helped create the niche that Japan used to enter the U.S. auto market, the fact that U.S. auto companies are still having difficulty retaining market share against Japanese imports across all types of automobiles, indicates that Japan's successful entry into the market would have been inevitable.

In addition to these non-telecommunications examples, the long distance market in the U.S. provides just as strong a demonstration that initial achievement of all economies of scale is unnecessary to compete successfully. Two of the significant participants in this proceeding, MCI WorldCom and Sprint, literally came from nowhere to occupy huge positions in the telecommunications marketplace today. MCI grew from a single microwave link between St. Louis and Chicago to an international state-of-the-art telecommunications network, based on fiber optics, not microwave. Sprint sprang from a start-up subsidiary of a railroad company to a full-service global telecommunications provider. At present, a relative newcomer, Global Crossing, is rising in the telecommunications ranks. It has laid fiber optic cable across Europe and under the Atlantic Ocean. It is now in the process of purchasing Frontier and U S WEST, two large U.S. local exchange providers. This "two-year old company with 200 staff, said it was

merging, on a 50-50 basis, with U S WEST, a local telephone company that employs 54,500 people."[28] These examples are not anomalies but are the norm in the American and world economies. They, among many others, demonstrate that viable entry against a large incumbent is not only feasible, but it is the way competition works.

Finally, even if one were to allow, *arguendo*, that there are economies of scale achieved by ILECs that give them lower costs, it is hardly the case that entrants such as AT&T, MCI WorldCom and Sprint suffer from any disadvantage in this respect. Firms like AT&T have far greater national scale than any ILEC. AT&T's enormous long distance, wireless, and cable base gives it a huge scale advantage over any ILEC. AT&T's geographic reach is broader, its number of customers is greater, and its financial wherewithal exceeds that of any ILEC. The naïve notion that, because ILECs have a large number of switches, they enjoy cost advantages in switching over CLECs is completely wrongheaded, as the facts presented in Section VII(A) show. It is absurd to suggest that CLECs covet the ILECs' aging, switch-intensive network architecture because they seek the ILECs' "economies of scale." As one analyst noted, "Many CLECs compete not just through new services, but through the network architecture they employ to deliver these services. For instance, CLECs increasingly choose decentralized network infrastructures with intelligence distributed to end points in favor of antiquated hierarchical topologies with T-1 and T-3 lines that terminate centrally via CSU/DSU racks and M13 multiplexers."[29]

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[28] Alexander, Garth, "Winnick's Minnow Swallows a Whale," Sunday Times - London, May 23; 1999, p. 9.

[29] Verger, Jose, "Marketing & Services: Competition with a capital 'C'," *Telephony*, October 19, 1998.

D. A Failure To Obtain Ubiquitous, Nearly Instantaneous Facilities-Based Entry Is Not A Reasonable Definition Of "Impairment"

An erroneous theme advanced by intervenors is that viable facilities-based entry must be geographically ubiquitous and that UNEs are the only practical way of generating such entry. For example, MCI WorldCom's witness, Dr. John Kwoka, argues that facilities-based entry is, "with isolated exceptions...prohibitively expensive and enormously time-consuming."[30] He proceeds to discuss the costs of a single carrier duplicating the existing network and achieving complete ubiquity, concluding that facilities-based entry is infeasible.[31] Dr. Kwoka offers no factual evidence whatsoever for these conclusions, only speculation. More important, Dr. Kwoka's "entry" scenario is a straw man. It may indeed be true that no single provider can recreate the entire network, and do so in a short period of time; it is also true that no carrier need do so to have a profitable business case, and no carrier need do so for customers to have meaningful choices.

There are several flaws in Dr. Kwoka's argument. First, if a carrier wanted to provide mass market service, it certainly would not choose to do so by recreating the incumbent LEC's technology, which is no longer an efficient network architecture, as we discussed previously. Second, Dr. Kwoka's assertions about the "infeasibility" of mass

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30 Declaration of John E. Kwoka, on Behalf of MCI WorldCom, Inc., In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, CC Dockets Nos 96-98 and 95-185, May 1999, ¶ 17. See also the Comments of Sprint Corporation, p.31; Comments of the Competitive Telecommunications Association, pp. 30, 35, 36.

31 Declaration of John E. Kwoka, on Behalf of MCI WorldCom, Inc., In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, CC Dockets Nos. 96-98 and 95-185, May 1999, ¶ 21.

market entry are refuted by AT&T's aggressive moves into cable. In the course of a few months, AT&T has purchased or gained access to cable facilities that pass more than 60% of households in the United States.[32] MCI and Sprint recently purchased "wireless cable" companies, giving them the ability to offer fixed wireless telephony, video, and high-speed data access to residential customers in various markets across the country.[33] The dire assertions of AT&T and MCI ignore the fact that faced with potential profit opportunities, businesses tend to find ways to access them. Dr. Kwoka's tunnel vision focus on a need to "replicate" the LEC network fails to acknowledge the creativity and innovative potential that exists in our economy and that the Act is meant to encourage.

Third, there is no reason that a single CLEC need serve all customers for all customers to be served. CLECs can and do adopt geographically limited strategies. Allegiance, for example, started out as a provider in Dallas en route to entering the New York, Atlanta, Chicago, and Los Angeles markets, among others, in the next year. Focal Communications began operations in Chicago in 1997, several months before launching service in the New York market, and eventually expanding to cities scattered across the country. It is neither necessary nor particularly desirable for a single provider to serve all of these markets. But the straw man scenario presented by Dr. Kwoka dismisses this obvious point. Indeed, while Dr. Kwoka argues that the "scale economies" in the local market create barriers to entry, he himself cites to empirical economic research that

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32 Blumenstein, Rebecca, and Cauley, Leslie, "AT&T Grabs Powerful Position As Cable, Phone Worlds Collide," *The Wall Street Journal*, May 6, 1999.

33 Borland, John, "Broadband Underdogs Take Aim At AT&T," *CNET News.Com*, 4/28/99, available at http://www.news.com/News/Item/0,4,35797,00.html?tt.yfin..txt.ni.

indicates that small scale entry is the norm and has higher survival than large scale entry in markets with scale economies.[34]

VI. Contrary To Their Assertions, CLECs Have Significant Profit Opportunities

Finally, AT&T asserts that "CLECs will encounter high risks and, at best, marginal opportunities to earn profits." This statement is absurd and contradicted by AT&T's own behavior, as well as the market capitalization of numerous CLECs and AT&T's own statements to financial analysts.

CLECs have passed a market test in successfully demonstrating that entry is feasible without unbundled elements. Consider two notable examples, MFS and TCG. Both of these firms have been acquired by IXCs, WorldCom (now MCI WorldCom) and AT&T, respectively. Both of these formerly independent CLECs were facilities-based local service providers. Indeed, it was because of this fact that they were of great value to their acquirers. Before the acquisition, TCG was already known as a leading local services provider, with a fiber optic network encompassing more than 250 communities throughout the U.S., including sixty-six of the major markets.[35] According to AT&T's C. Michael Armstrong: "Joining forces with TCG will speed AT&T's entry into the local business market, reduce our costs and enable us to provide businesses the any distances services they want. TCG has more fiber route miles and serves more businesses in more

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34 Declaration of John E. Kwoka, on Behalf of MCI WorldCom, Inc., In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996 and Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers, CC Dockets Nos. 96-98 and 95-185, May 1999, p. 9, note 3.

35 "AT&T and Teleport Communications Group to Merge; TCG to Become Core of AT&T's Local Services Unit," *TCG Press Release,* January 8, 1998.

cities than any other competitive local services company...Together, [AT&T and TCG] will be able to bring AT&T Digital Link Service to thousands more American businesses."[36] Before its purchase by MCI WorldCom, MFS, together with UUNET, provided integrated local and long-distance services as well as Internet services over a fiber optic network. According to Bernard J. Ebbers of WorldCom, "[The merger with MFS would create] the first company since the breakup of AT&T to bundle together local and long distance services carried over an international end-to-end fiber network owned or controlled by a single company."[37] Financial analysts were similarly optimistic about the marriage between MCI's long distance business and WorldCom's local and data businesses, stating that "[MCI's] base of [large, multi-location, data-intensive customers] are precisely the type of customers who require, if not demand, the type of end-to-end connectivity that WorldCom's and MFS' networks can provide."[38] WorldCom's recent marketing campaign touting its "On-Net" services, delivering "the last and most critical mile of network connection: local dial tone service"[39] over a single network further verifies the value of self-provisioned local exchange facilities.

Data presented in Table 1 show the huge market values of these facilities-based CLECs upon their acquisition by the IXCs. As can be seen from the data, the prices paid

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36 "AT&T and Teleport Communications Group to Merge; TCG to Become Core of AT&T's Local Services Unit," *TCG Press Release,* January 8, 1998.

37 "WorldCom, Inc. and MFS Announce Merger to Form Premier Business Communications Company," *WorldCom Press Release,* August 26, 1996.

38 Salomon Smith Barney, Grubman/McMahon, "WorldCom, Inc. – Combination with MCI Creates the Only Legitimate Telecom Large-Cap Growth Stock," April 9, 1998, p. 14.

39 MCI WorldCom web site, http://www.wcom.com/services_for_business/on_net/voice_local.shtml, downloaded June 9, 1999.

for these CLECs by the acquiring IXCs were very high relative to the CLECs' then-current revenue. In fact, these CLEC ratios are considerably higher than the comparable ratios for the large ILECs. It follows that these CLECs were purchased at high prices, not because of their profitability or high market shares, but because of the strong expectations of the future high revenue growth, margin growth and therefore the high profits that could be reaped from the use of their assets.

Table 1
Acquisition Prices of Large CLECs Acquired by IXCs

Target	MFS	Brooks	TCG
Acquirer	MCI WorldCom	MCI WorldCom	AT&T
Transaction Completion Date	12/31/96	1/30/98	7/23/98
Target Market Capitalization ($ billions)	14.1	2.5	11.3
Ratio of Market Value to Annual Revenue			
Acquired CLEC	14.6	19.1	12.4
Large ILECs	2.8	3.49	2.7

Notes: Market capitalizations are calculated on the date of the acquisition. Financial ratios are based on the four full quarters preceding the acquisition. The "Large ILECs" figures represent a simple average of Ameritech, Bell Atlantic, BellSouth, SBC Communications, U S WEST, and GTE data.

Moreover, AT&T surely did not spend $54 billion to purchase TCI and $54 billion to purchase MediaOne[40] in order to have the opportunity to earn "marginal profits." AT&T is on the record as having purchased TCI, struck deals with Time Warner and Comcast, and being in the process of buying MediaOne, in order to pursue a local telecommunications entry strategy. These deals will give AT&T "full or partial ownership of the wires serving up to 55 percent of the nation's cable customers."[41]

40 Siklos, Richard, et al., "The Net-Phone-TV-Cable Monster," Business Week, May 10, 1999, p. 30.

41 Farhi, Paul, "Too Big Once Again?; Critics See Cable Behemoth Forming," The Washington Post, April 27, 1999, p. E1.

Finally, in a presentation to financial analysts regarding its acquisition of MediaOne, AT&T shows that it expects its residential local telephony operations to generate more earnings than consumer long-distance within five years![42] The huge market capitalizations of other CLECs reflect the market's belief that these firms have sound business cases; the behavior of the market is not consistent with the belief that CLECs face only risky opportunities to earn "marginal" profits at best.

VII. The CLECs' Arguments That Switching And The UNE Platform Should Be Unbundled Are Flawed

Only a well-reasoned empirical analysis can lend substance to economic theory and cut through the thicket of anecdote and rhetoric obscuring the truth about the necessity of unbundled elements. Our finding that *CLEC entry would not be impaired without access to ULS or UNE-P* was supported in our initial affidavits by two separate empirical analyses, each of which is sufficiently probative on its own:

- A review and documentation of actual CLEC entry strategies, and in particular, CLECs' widespread deployment of switching facilities; and
- A detailed investigation demonstrating the profitability of investment to provide competitive facilities-based local exchange service in middle-tier markets (such as Columbus, OH) using conservative assumptions from the LECG model, whose results have already been filed in this proceeding.[43]

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42 "AT&T Proposal for the Acquisition of MediaOne," AT&T analyst presentation, April 23, 1999. Page 6 of the presentation shows that consumer long distance will comprise only 9% of AT&T's 2004 projected EBITDA, compared with 12% for "residential data and broadband telephony." Page 20 of the document shows that, in general, AT&T Broadband's EBITDA attributable to telephony is more than three times greater than that attributable to data. Taken together, this implies that AT&T's local telephony earnings will exceed its consumer long distance earnings.

43 See Fitzsimmons Affidavit.

We here provide additional support for the conclusion that switching cannot satisfy the impair standard under any reasonable definition.

Several CLECs attempt to advocate the erroneous thinking described above regarding economies of scale and related cost conditions to justify a requirement to unbundle local switching. As part of this flawed analysis, they assert that: (1) CLECs cannot economically deploy switching on a widespread basis, (2) CLECs suffer net cost disadvantages vis-a-vis ILECs and consequently, (3) CLECs need access to the UNE-P including switching to be able to offer ubiquitous mass-market competition. We demonstrate below that all of these assertions are false.

While these opposing commentaries systematically fail to offer any concrete economic evidence, save for quoting a few misleading statistics, we provide a substantial real-world analysis to demonstrate the validity of our position. The simple fact is that CLECs are indeed entering the local exchange business in droves and are making substantial investments in alternative local exchange facilities, building their own switching, transport and distribution systems. Contrary to their assertions in this proceeding, the CLECs expect these efforts to be extremely profitable, as they have repeatedly told their shareholders.[44] The Commission could quickly resolve the question of impairment by requesting that large CLECs such as AT&T and MCI WorldCom disclose the internal business case analyses justifying their investment in competitive facilities. We are confident that these business cases would demonstrate that a lack of

[44] For example "[AT&T] Chief Financial Officer Daniel Somers says AT&T can make its $116 billion investment in TCI and MediaOne pay off richly. He even forecasts an internal rate of return near 25% on the investment." See Scott Woolley, "A Two-front War," Forbes, May 31, 1999, p. 55.

unbundled local switching would *not* impair these competitors under any reasonable definition of the term. The Fitzsimmons/LECG model attempts to emulate such a business case, and shows that CLEC-style local entry is expected to be highly profitable without unbundled local switching even in middle-tier markets such as Indianapolis, IN and Columbus, OH.

While the factual evidence we present is conclusive, we remind the Commission that the most direct way to determine which elements are truly vital to competition would be to compare CLECs' internal business plans with their representations in this proceeding. The Court mandated that elements are presumed *not* to be unbundled unless they are shown to be necessary or to impair competition. Let the CLECs' actual financial plans do the talking for them on this issue.

A. CLECs Can Profitably Expand Their Local Switching Coverage

CLECs claim that they need access to unbundled local switching (as well as all other elements) because they would otherwise be at a cost disadvantage with respect to ILECs. As previously discussed, the opposing parties believe that competition is extremely difficult, if not impossible, unless they have costs equal or superior to the incumbent. They generally rely on two inconsistent claims:

1. CLECs claim that they would incur miscellaneous "extra" costs with respect to ILECs to haul traffic to and from unbundled ILEC loops and their switches; and
2. CLECs claim that they would be at a cost disadvantage if they attempted to replicate the ILECs' existing networks.

AT&T further argues that it would be economically impossible to replicate the 24,000 local switches that ILECs currently have in operation, at a claimed cost of $60 billion.[45] As we have shown, this argument is a red herring, as it is based on the faulty assumption that CLECs will completely overbuild the ILEC switching network.

We now examine the enormous overstatement introduced by this "unrealistic assumption." Using facts in the record, we show that $6 billion is a "conservative" estimate of the total cost of nationwide switch deployment, and that AT&T and other commenters are vastly overstating the switching investment required.

AT&T erroneously cites the ILECs' embedded investment cost of $60 billion to bolster its claim that entry requires "necessary extraordinary investment."[46] AT&T's claim violates the very TELRIC principles that it steadfastly advocates elsewhere in its comments. First, a CLEC deciding whether or not to deploy a switch would examine the cost of switching today. The historical costs of ILECs who acquired their switches many years ago are irrelevant to today's entrants.[47]

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45 See AT&T Comments at p.90.

46 AT&T comments at pp.90-91.

47 See *UNE Fact Report,* Submitted by the United States Telephone Association, prepared for Ameritech, Bell Atlantic, BellSouth, GTE, SBC, and U S WEST, May 26, 199, by Peter W. Huber and Evan T. Leo, hereinafter *Huber-Leo Report*, at I-28. Huber and Leo report that "on a per-line basis, prices declined over 60 percent from 1986 to 1996, and were projected to fall another 12 percent by 2000. 58 As a result, newer buyers – like CLECs – typically pay less for switching than older buyers – like ILECs,." citing Northern Business Information, U.S. Central Office Equipment Market: 1996 Database, Version 1.0, at 27 (Jan. 1997).

The major ILECs' median wire center serves fewer than 5,000 lines, and 80% of ILEC wire centers serve fewer than 20,000 lines.[48] An entrant would not deploy switches with such limited reach today – the increased capacity of modern switches and the rapidly falling costs of fiber optic transport would allow an entrant to replicate the incumbent switching fabric using fewer and larger switches.[49] Given the designs of current CLEC networks, CLECs in even mid-tier markets can serve 30,000 to 70,000 lines on a switch within two years of entry. Modern switches can easily be expanded with incremental capacity because of their modular, pay-as-you-go design.[50]

Forward-looking costs should be used to estimate CLECs' switching investment. The Joint Board estimated switching investment costs to consist of $150,000 in "getting started" costs per switch, plus capacity-related costs of $110 per line.[51] We note that this estimate may be "conservative" in the sense that it may still overestimate CLEC

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48 See Huber-Leo Report at Section II, at Figure 1, and Table 2, p.8. These values only include Ameritech, Bell Atlantic, BellSouth, GTE, SBC and US WEST. For the other smaller ILECs, the proportion of wire centers with less than 20,000 lines would certainly be far higher.

49 See Huber-Leo Report at Section I, p.23: "Both the FCC and state regulators have recognized that CLEC switches can be expected to serve much larger areas than ILEC switches typically do," citing Telephone Number Portability, First Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 8352, 8449 n. 539 (1996) ("A new entrant will employ equipment capable of serving a larger area per switch, and serve fewer customers in each area served by one switch, than incumbent LECs do presently. As a result, one switch of a new entrant could serve all customers in a certain area, while the incumbent LEC must use two or more switches to serve all customers in that area."); and Report of Texas Number Conservation Task Force, December 12, 1997, http://www.npac.com/regions/southwest/swdocs/texas/txNumberConservation.htm ("[CLECs] are likely to provide service using a network architecture which is not a mirror image of the ILEC infrastructure. Specifically, the area served by a CLEC switch is likely to be much larger than that of the ILEC and may/will cover a multitude of existing rate centers.").

50 See Huber-Leo Report at I-28, reporting that "Lucent markets its flagship 5ES-2000 directly to CLECs, noting that '[w]ith a minimal investment in hardware, real estate and staff, emerging competitors can quickly provide telecommunications services and support a large number of customers and services with our 5ESS®-2000 Switches,' citing Lucent, "Build a Flat, Flexible Network," available online at http://www.lucent.com/netsys/5ESS/family/build.html.

51 See Fitzsimmons Affidavit at p. 20.